

CLAIMS

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2 The invention claimed is:

3 1. A hydrofoil system for lifting a boat out of water an amount
4 sufficient to reduce drag while still allowing the boat to be
5 powered by a conventional inboard-outboard drive, wherein the boat
6 has a hull with a bottom, a bow, a stern with port and starboard
7 trim tabs, and a substantial center which is intermediate the bow
8 of the hull and the stern of the hull, said system comprising:

9 a) a front hydrofoil unit;

10 b) a center hydrofoil unit; and

11 c) a pair of rear hydrofoil units;

12 wherein said front hydrofoil unit is for depending from the bottom
13 of the hull at the bow thereof;

14 wherein said pair of rear hydrofoil units are for depending from the
15 port and starboard trim tab units of the hull, respectively; and

16 wherein said center hydrofoil unit is for depending from the bottom
17 of the hull at the substantial center thereof.

18 2. The system as defined in claim 1, wherein said front hydrofoil unit
19 comprises a mounting portion;

20 wherein said front hydrofoil unit comprises a hydrofoil portion;

21 wherein said mounting portion of said front hydrofoil unit is for
22 mounting to the bottom of the hull at the bow thereof;

23 wherein said mounting portion of said front hydrofoil unit is for
24 depending from the bottom of the hull at the bow thereof;

25 wherein said hydrofoil portion of said front hydrofoil unit mounts
26 to said mounting portion of said front hydrofoil unit; and

27 wherein said hydrofoil portion of said front hydrofoil unit depends
28 from said mounting portion of said front hydrofoil unit.

- 1 3. The system as defined in claim 2, wherein said mounting portion of
2 said front hydrofoil unit comprises a pair of upper plates;
3 wherein said pair of upper plates of said mounting portion of said
4 front hydrofoil unit are disposed in a V-shape along a common edge
5 thereof;
6 wherein said pair of upper plates of said mounting portion of said
7 front hydrofoil unit are for mounting to the bottom of the hull at
8 the bow thereof; and
9 wherein said pair of upper plates of said mounting portion of said
10 front hydrofoil unit are for depending from the bottom of the hull
11 at the bow thereof.
- 12 4. The system as defined in claim, 3, wherein said pair of upper plates
13 of said mounting portion of said front hydrofoil unit have through
14 bores.
- 15 5. The system as defined in claim 3, wherein said mounting portion of
16 said front hydrofoil unit comprises a stanchion; and
17 wherein said stanchion of said mounting portion of said front
18 hydrofoil unit depends along said common edge of said pair of upper
19 plates of said mounting portion of said front hydrofoil unit.
- 20 6. The system as defined in claim 5, wherein said mounting portion of
21 said front hydrofoil unit comprises a lower plate; and
22 wherein said lower plate of said mounting portion of said front
23 hydrofoil unit depends from said stanchion of said mounting portion
24 of said front hydrofoil unit.
- 25 7. The system as defined in claim 6, wherein said lower plate of said
26 mounting portion of said front hydrofoil unit contains through
27 bores.

- 1 8. The system as defined in claim 6, wherein said mounting portion of
2 said front hydrofoil unit comprises a pair of struts;
3 wherein said pair of struts of said mounting portion of said front
4 hydrofoil unit extend from said pair of upper plates of said
5 mounting portion of said front hydrofoil unit to said lower plate
6 of said mounting portion of said front hydrofoil unit, respectively.
- 7 9. The system as defined in claim 7, wherein said hydrofoil portion of
8 said front hydrofoil unit comprises an upper plate;
9 wherein said upper plate of said hydrofoil portion of said front
10 hydrofoil unit attaches to said lower plate of said mounting portion
11 of said front hydrofoil unit; and
12 wherein said upper plate of said hydrofoil portion of said front
13 hydrofoil unit depends from said lower plate of said mounting
14 portion of said front hydrofoil unit.
- 15 10. The system as defined in claim 9, wherein said upper plate of said
16 hydrofoil portion of said front hydrofoil unit contains through
17 bores;
18 wherein said through bores in said upper plate of said hydrofoil
19 portion of said front hydrofoil unit align with said through bores
20 in said lower plate of said mounting portion of said front hydrofoil
21 unit so as to form aligned through bores; and
22 wherein said aligned through bores receive upper bolts.
- 23 11. The system as defined in claim 9, wherein said hydrofoil portion of
24 said front hydrofoil unit comprises an extension; and
25 wherein said extension of said hydrofoil portion of said front
26 hydrofoil unit depends from said upper plate of said hydrofoil
27 portion of said front hydrofoil unit.

- 1 12. The system as defined in claim 11, wherein said hydrofoil portion
2 of said front hydrofoil unit comprises a lower plate; and
3 wherein said lower plate of said hydrofoil portion of said front
4 hydrofoil unit depends from said extension of said hydrofoil portion
5 of said front hydrofoil unit.
- 6 13. The system as defined in claim 12, wherein said lower plate of said
7 hydrofoil portion of said front hydrofoil unit has through bores.
- 8 14. The system as defined in claim 13, wherein said hydrofoil portion
9 of said front hydrofoil unit comprises a stanchion;
10 wherein said stanchion of said hydrofoil portion of said front
11 hydrofoil unit attaches to said lower plate of said hydrofoil
12 portion of said front hydrofoil unit; and
13 wherein said stanchion of said hydrofoil portion of said front
14 hydrofoil unit depends from said lower plate of said hydrofoil
15 portion of said front hydrofoil unit.
- 16 15. The system as defined in claim 14, wherein said stanchion of said
17 hydrofoil portion of said front hydrofoil unit has through bores;
18 wherein said through bores in said stanchion of said hydrofoil
19 portion of said front hydrofoil unit align with said through bores
20 in said lower plate of said hydrofoil portion of said front
21 hydrofoil unit so as to form aligned through bores; and
22 wherein said aligned through bores receive lower bolts.
- 23 16. The system as defined in claim 14, wherein said hydrofoil portion
24 of said front hydrofoil unit comprises a hydrofoil;
25 wherein said hydrofoil of said hydrofoil portion of said front
26 hydrofoil unit depends from said stanchion of said hydrofoil portion
27 of said front hydrofoil unit; and

1 wherein said hydrofoil of said hydrofoil portion of said front
2 hydrofoil unit extends equidistantly out from said stanchion of said
3 hydrofoil portion of said front hydrofoil unit.

4 17. The system as defined in claim 1, wherein said center hydrofoil unit
5 comprises a pair of stanchions;
6 wherein said center hydrofoil unit comprises a hydrofoil;
7 wherein said pair of stanchions of said center hydrofoil unit are
8 for mounting to the bottom of the hull at the substantial center
9 thereof;
10 wherein said pair of stanchions of said center hydrofoil unit are
11 for depending from the bottom of the hull at the substantial center
12 thereof; and
13 wherein said pair of stanchions of said center hydrofoil unit are
14 for straddling the bottom of the hull at the substantial center
15 thereof.

16 18. The system as defined in claim 17, wherein said hydrofoil of said
17 center hydrofoil unit depends from said pair of stanchions of said
18 center hydrofoil unit; and
19 wherein said hydrofoil of said center hydrofoil unit extends
20 equidistantly outwardly from said pair of stanchions of said center
21 hydrofoil unit.

22 19. The system as defined in claim 1, wherein each rear hydrofoil unit
23 comprises a pair of stanchions;
24 wherein each rear hydrofoil unit comprises a hydrofoil;
25 wherein said pair of stanchions of each rear hydrofoil unit are for
26 mounting to an associated one of the port and starboard trim tabs;
27 and

1 wherein said pair of stanchions of each rear hydrofoil unit are for
2 depending from the associated one of the port and starboard trim
3 tabs.

4 20. The system as defined in claim 19, wherein each stanchion of each
5 rear hydrofoil unit is inverted L-shaped;
6 wherein each stanchion of each rear hydrofoil unit has a vertical
7 portion;
8 wherein each stanchion of each rear hydrofoil unit has a horizontal
9 portion; and
10 wherein said horizontal portion extends outwardly from said vertical
11 portion thereof.

12 21. The system as defined in claim 20, wherein said horizontal portion
13 of each stanchion of each rear hydrofoil unit has through bores; and
14 wherein said through bores in said horizontal portion of each
15 stanchion of each rear hydrofoil unit are for receiving screws for
16 attaching said pair of rear hydrofoil units to the port and
17 starboard trim tabs, respectively.

18 22. The system as defined in claim 20, wherein said hydrofoil of each
19 rear hydrofoil unit depends from said pair of stanchions of an
20 associated rear hydrofoil unit; and
21 wherein said hydrofoil of each rear hydrofoil unit extends
22 equidistantly outwardly from said pair of stanchions of said
23 associated rear hydrofoil unit.